

**CLAIMS**

1 A method of compensating tilt of an optical or magneto-optical disc exhibiting  
unknown tilt when placed in an apparatus for reading and/or writing data from and/or onto  
5 said optical or magneto-optical disc, comprising the steps of:

- a) detecting an amount of one element of the group comprising the tilt of said disc, a  
coma aberration resulting from said tilt, and a physical quantity related to said coma  
aberration,
- b) providing a holographic optical element in a light path of an optical read/write unit of  
10 said apparatus, said holographic optical element containing a plurality of holograms each  
defining a phase profile able to compensate at least a specific coma amount,
- c) selecting among said plurality of holograms a hologram defining a phase profile  
corresponding to the amount of tilt or coma detected in step a), and
- d) using the selected hologram for compensating the detected amount of tilt or coma.

15 2 The method of claim 1, wherein said selecting step is performed by changing a  
relative spatial relationship between said holographic optical element and a polarization  
direction of a light beam impinging on said holographic optical element in said optical  
read/write unit.

3 The method of claim 2, wherein said relative spatial relationship is changed by  
20 rotating said holographic optical element.

4 A device for compensating tilt of an optical or magneto-optical disc exhibiting  
unknown tilt when placed in an apparatus for reading and/or writing data from and/or onto  
said optical or magneto-optical disc, comprising:

- a) means for detecting an amount of one element of the group comprising the tilt of said  
25 disc, a coma aberration resulting from said tilt, and a physical quantity related to said coma  
aberration,
- b) holographic optical element disposed in a light path of an optical read/write unit of  
said apparatus, said holographic optical element containing a plurality of holograms each  
defining a phase profile able to compensate at least a specific coma amount, and
- 30 c) means for selecting among said plurality of holograms a hologram defining a phase  
profile corresponding to the amount of tilt or coma which has been detected by said detecting  
means and which is to be compensated.

5       The device of claim 4, wherein said selecting means comprises means for changing a relative spatial relationship between said holographic optical element and a polarization direction of a light beam impinging on said holographic optical element.

6       The device of claim 5, wherein said changing means comprises means for rotating  
5       said holographic optical element.

7       An apparatus for reading and/or writing data from and/or onto an optical or magneto-optical disc, said apparatus comprising:

a)       an optical unit able to read and/or write data from and/or onto an optical or magneto-optical disc placed into said apparatus, and

10      b)       means for compensating tilt of said disc, said compensating means comprising:

        b1)           means for detecting an amount of one element of the group comprising the tilt of said disc, a coma aberration resulting from said tilt, and a physical quantity related to said coma aberration,

        b2)       a holographic optical element disposed in a light path of said optical  
15      read/write unit of said apparatus, said holographic optical element containing a plurality of holograms each defining a phase profile able to compensate at least a specific coma amount, and

        b3)       means for selecting among said plurality of holograms a hologram defining a phase profile corresponding to the amount of tilt or coma which has been detected by said  
20      detecting means and which is to be compensated.

8       The apparatus of claim 7, wherein said selecting means comprises means for changing a relative spatial relationship between said holographic optical element and a polarization direction of a light beam impinging on said holographic optical element.

9       The apparatus of claim 8, wherein said changing means comprises means for rotating  
25      said holographic optical element.

10      A holographic optical element for use in an apparatus for reading and/or writing data from and/or onto at least one optical or magneto-optical disc placed in said apparatus, said disc exhibiting unknown tilt when placed in said apparatus, said holographic optical element comprising a substrate containing a plurality of holograms defining a corresponding plurality  
30      of phase profiles, each phase profile being able to compensate a specific amount of coma corresponding to a tilt amount likely to be exhibited by a disc placed in said apparatus.